REMARKS / ARGUMENTS

Claims 4-6 and 10-25, 28 and 29 are now pending in the present application.

Claims 1-3 and 7-9 were previously canceled and claims 26 and 27 are canceled, without prejudice, with the present amendment.

Claim 10 has been allowed but amended by replacing 'data packets' with "packets" to be consistent with the description of the invention.

Claims 4 and 19 have been amended to distinctly claim the subject matter of the present invention.

The present invention relates to the high-speed transfer of data, such as audio video data organized as individual packets. A number of such packets are grouped to form a frame. These packets may be stored on a storage medium such in sectors of a disk drive where packet boundaries are not necessarily maintained. When a receiving device accesses the data stored on the disk drive, records stored on the disk drive are moved to a buffer and then transferred to the device, frame by frame in a high-speed manner. Often times, the receiving device or the disk drive is not aware that the data is frame based or is to be delivered in a high-speed environment. Thus, it is important for an isochronous data processor (IDP) to be able to quickly and efficiently identify the packets and perhaps more importantly, the packet that defines a frame boundary, the start of a frame of data. Unfortunately, the processing load on the IDP demands that it be able to efficiently identify the start of a frame of data and, more specifically, to identify the packet that comprises the frame boundary.

Accordingly, when packets are received, a marker is inserted at the start of each packet. With the novel inclusion of the marker, the IDP is able to quickly locate isochronous headers in a stream of data as it is read back from the storage device. Further, the IDP is also able to efficiently identify which packet comprises the start of the frame. Then when the packets are recovered from the storage medium, the present invention enables the IDP, or processor, to scan the data stream looking only for the

uniquely identifiable marker. Once the marker is found, the next data item is the isochronous header followed by the payload. Thus, the processor may process a small number of the data items to determine if the packet is the start of a frame rather than the entire packet. If the packet is not the start of a frame, the packet is quickly discarded. By quickly discarding the packet, the processor is able to process more efficiently the data stream by locating the packet that starts next frame and to deliver packets to the requesting device within the time constraints of the high-speed bus. To do otherwise is to suffer poor quality, slow response and generally inadequate response associated with the prior art devices.

As will be appreciated, when streaming high-speed data on, for example, an IEEE-1394 serial bus, the packet may only be sent during a very short window. Locating the start of the packet and the start of a frame is critical to synchronizing the data stream with the bus protocol without inordinate delay.

Claims 4, 6, 11-16, 18-20, 22-25 stand rejected under 35 U.S.C. 102(e) as being anticipated by Movshovich et al. (USPN 6,434,146B1).

Movshovich relates to the distribution of MPEG-2 transport packets where a local header is appended to the start of each transport packet. The local header is used to store a counter value that is subsequently used, during playback, to maintain synchronization. However, Movshovich operates in a completely non-analogous manner from the claimed invention.

Specifically, as noted at column 13, line 41- column 14, line 13, Movshovich teaches that the entire packet is moved into the FIFO and the local header must be the first 16 bits. Importantly, Movshovich does not recognize one of the problems solved by the present invention – how to locate the start of a packet. Thus, Movshovich is inherently inefficient if the packet is not properly aligned and does not address how to locate the start of a packet.

Movshovich also teaches that once the packet is in the FIFO buffer, the local header includes a Transport Sequence Time Stamp value that is compared to a local packet counter value 921. This implies the header must be parsed to first recover the time stamp value and then compared to the local packet counter. This adds undesirable

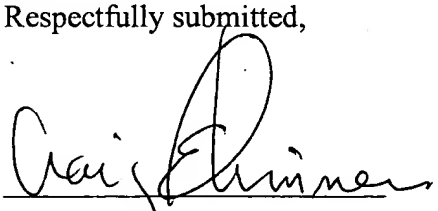
delay to the delivery of the data. Moreover, if these two values are different, then Movshovich teaches that the packet is not sent and the link must insert gaps into the 1394 isochronous data stream until the two values match. Again, these gaps interject undesirable delay in the delivery of the data.

The teachings of Movshovich are completely different from the present invention because if the Mavshovich system were implemented, it would result in critical delay in displaying the requested data - first to find the start of the packet and then while waiting for the two values to match. This very problem is described in the present specification. See for example, page 1 of the present specification beginning at line 25.

The present invention, as now more clearly claimed in Claims 4, 10 and 19, eliminates this critical delay by using the marker to efficiently identify packet boundaries and then to quickly identify packets that comprise the start of a frame without waiting for counts to match. Combining the teachings of Lynn with Movshovich does not overcome the shortcomings of Movshovich and certainly does not disclose the novel aspects of the present invention as now claimed.

Accordingly, independent claims 4, 10 and 19, together with dependent claims 5, 6, 11-25, 28 and 29, are now believed to be in condition for allowance. Applicant respectfully requests that a Notice of Allowance be timely issued in this case. If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 415-279-5098.

Respectfully submitted,



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